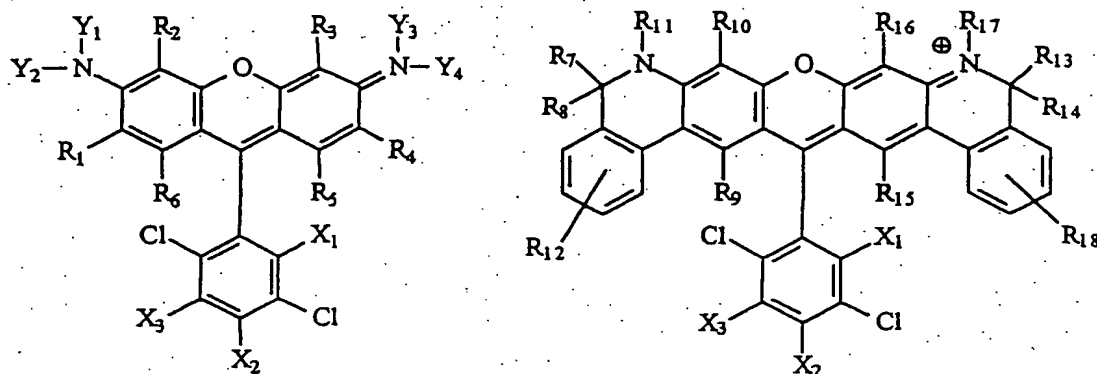


ABSTRACT

A set of 4,7-dichlororhodamine compounds useful as fluorescent dyes are disclosed having the structures



wherein R₁-R₆ are hydrogen, fluorine, chlorine, lower alkyl, lower alkene, lower alkyne, sulfonate, sulfone, amino, amido, nitrile, lower alkoxy, linking group, or, when taken together, R₁ and R₆ is benzo, or, when taken together, R₄ and R₅ is benzo; R₇-R₁₀, R₁₂-R₁₆ and R₁₈ may be hydrogen, fluorine, chlorine, lower alkyl, lower alkene, lower alkyne, sulfonate, sulfone, amino, amido, nitrile, lower alkoxy, linking group; R₁₁ and R₁₇ may be hydrogen, lower alkyl, lower alkene, lower alkyne, phenyl, aryl, linking group; Y₁-Y₄ are hydrogen, lower alkyl, or cycloalkyl, or, when taken together, Y₁ and R₂, Y₂ and R₁, Y₃ and R₃, and/or Y₄ and R₄ is propano, ethano, or substituted forms thereof; and X₁-X₃ taken separately are hydrogen, chlorine, fluorine, lower alkyl, carboxylate, sulfonate, hydroxymethyl, and linking group, or any combinations thereof. In another aspect, the invention includes reagents labeled with the 4,7-dichlororhodamine dye compounds, including deoxynucleotides, dideoxynucleotides, and polynucleotides. In an additional aspect, the invention includes methods utilizing such dye compounds and reagents including dideoxy polynucleotide sequencing and fragment analysis methods.